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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,884	09/29/2003	Kelly Shoemake	005242.00133	5371

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EXAMINER

MATZEK, MATTHEW D

ART UNIT PAPER NUMBER

1771

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/671,884	Applicant(s) SHOEMAKE ET AL.	
	Examiner Matthew D. Matzek	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-21 is/are pending in the application.
- 4a) Of the above claim(s) 14-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-13 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

1. The amendment dated 7/27/2006 has been fully considered and entered into the Record. Claims 7-21 are currently pending, but claims 14-20 have been withdrawn from consideration. New claim 21 contains no new matter.

Claim Objections

2. Claims 13 and 21 are objected to because of the following informalities: styrene-maleic anhydride copolymer is misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 7-9 and 11-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Belmares et al. (US 2003/0099850).

Belmares et al. teach the creation of a low formaldehyde emission binder based upon a formaldehyde-based resin that reduces sag and enhances strength (Abstract). Soy protein (formaldehyde scavenger) is added to the urea formaldehyde (UF) binder to control the formaldehyde emissions [0011]. The binder of Belmares et al. may be used to bind fiberglass [0015]. Fiberglass articles are generally mixed with water into a slurry and then laid into a nonwoven panel [0004]. The effective range of the formaldehyde scavenger is from about 3% to about 40% based upon the weigh of the UF binder [0023].

Claim Rejections - 35 USC § 103

4. Claims 7-9 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al. (US 6,384,116) in further view of Belmares et al. (US 2003/0099850).

- a. Chan et al. teach the use of a binder composition comprising urea-formaldehyde modified with a water-soluble non-ionic amine oxide and optionally further modified with an anionic acrylic latex (Abstract). The applied invention is to be used for glass fiber mats and results in improved tensile strength of said mats (Abstract). The glass mats are to be used as a roofing product (col. 1, lines 31-36). Glass fiber mats are generally made by a wet-laid nonwoven process (col. 1, lines 32-40). Chan et al. are silent as to the use of a formaldehyde scavenger such as soy protein.
- b. Belmares et al. teach the creation of a low formaldehyde emission binder based upon a formaldehyde-based resin that reduces sag and enhances strength (Abstract). Soy protein (formaldehyde scavenger) is added to the urea formaldehyde (UF) binder to control the formaldehyde emissions [0011]. The binder of Belmares et al. may be used to bind fiberglass [0015]. The effective range of the formaldehyde scavenger is from about 3% to about 40% based upon the weight of the UF binder [0023].
- c. Since Belmares et al. and Chan et al. are from the same field of endeavor, (i.e. glass fiber mats bound by formaldehyde-based resins) the purpose disclosed by Belmares et al. would have been recognized in the art of Chan et al.
- d. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have modified the adhesive of Chan et al. with the formaldehyde scavenger of Belmares et al. The skilled artisan would have been motivated by the desire to reduce the amount of formaldehyde emitted by the fibrous article [0019, Belmares et al.].

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5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belmares et al. (US 2003/0099850) as applied to claim 9 above, and further in view of Trocino (WO 01/59026). Belmares et al. is silent as to the type of soy protein to be used in the applied invention.

a. Trocino discloses a vegetable protein-based adhesive composition comprising soy protein made from soy meal (soy flour) (Abstract). Example 1 teaches a binder formulation comprising soymeal and urea-formaldehyde.

b. Since Belmares et al. and Trocino are from the same field of endeavor (i.e. soy protein binders for use in the construction of fiberboard panels) the purpose disclosed by Trocino would have been recognized in the pertinent art of Belmares et al.

c. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the adhesive composition of Belmares et al. with the soy flour of Trocino motivated by the fact that soy meal is low in cost and is readily available.

6. Claims 13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belmares et al. (US 2003/0099850) as applied to claim 7 above, and further in view of Chang et al. (WO 98/34885). Belmares et al. is silent as to the use of styrene-maleic anhydride copolymer to modify a urea-formaldehyde resin for bonding a wet laid fiber mat.

a. Chang et al. teach the use of water-soluble styrene-maleic anhydride copolymer (SMA) in a urea-formaldehyde resin for the preparation of fiber mats (Abstract). The applied invention may be used in the fabrication of wet-laid fiberglass articles (page 1, lines 12-24).

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b. Since Belmares et al. and Chang et al. are from the same field of endeavor, (i.e. glass fiber mats bound by formaldehyde-based resins) the purpose disclosed by Chang et al. would have been recognized in the art of Belmares et al.

c. It would have been obvious at the time the invention was made to one having ordinary skill in the art at the time the invention was made to have modified urea-formaldehyde binder of Belmares et al. with the SMA of Chang et al. motivated by the desire to improve the fiberglass mat's strength (page 4, lines 1-13).

Response to Arguments

7. Applicant's arguments filed 7/27/2006 have been fully considered but they are not persuasive.

8. Applicant argues that the Belmares et al. reference is directed to a panel or board and as such does not describe a nonwoven wet-laid fiber mat. Applicant is directed to paragraph of the applied reference, which describes the conventional process of manufacturing the invention of Belmares et al. Said process calls for the mixing of fibers and other materials in water to form a slurry and then processing into a board. This is a wet-laid process for manufacturing nonwoven fiberglass boards. This board may also be called a mat as it is a nonwoven three-dimensional matrix that has been formed using a wet-laid process. Examiner has considered Applicant's arguments and supporting findings pertaining to what constitutes a mat, but as stated in Applicant's response on page 7 a mat is a tangled mass of fibers formed simply by the deposition of fibers from a slurry. This is the process used by Belmares et al. [0004].

9. Applicant continues by arguing that the characteristics used to evaluate the instant and applied products further highlight their differences. Examiner contends that the invention of

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Belmares et al. is analogous as it is made via the same process as Applicant and meets the instant structural and compositional limitations. Applicant argues that Belmares et al. use a polymeric polyamide in the binder for a fundamentally different purpose than Applicant and as a consequence of this Belmares et al. favor using a much larger quantity of the polymeric polyamide, particularly when using protein, than is used in the instantly claimed invention. In response to applicant's argument that the references fail to show a certain feature of applicant's invention, it is noted that the features upon which applicant relies (i.e., quantity of polyamide binder) is not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

10. Applicant argues that while Belmares et al. indicates the effective range for protein polymeric scavengers is from about 5% to 50%, but the applied reference clearly suggests that levels above 10% and especially above 20% are preferred. Examiner would like to point out that Belmares et al. teach polymeric scavengers in the amount of about 5 to 10 weight percent of the dry weight of the formaldehyde resin, which anticipates the instant limitations. Applicant points out that the applied reference uses a scavenger level of 25 weight percent of the formaldehyde in Samples 2 and 3. The Belmares et al. reference is to be read in whole and is not to be limited to only its illustrative examples.

11. Applicant argues that Chan et al. fail to disclose the instantly claimed protein levels. Examiner has not relied upon Chan et al. for such a teaching. Examiner has relied upon Belmares et al. for the protein level teaching.

12. Applicant argues that a skilled worker would not have found it obvious to use protein as an additive in a wet-laid, nonwoven glass mat at a level of addition below that Belmares et al. prefer with a reasonable expectation that techniques and compositions relevant to one application would be applicable to the other. As pointed out supra, Belmares et al. teach the creation of a wet-laid, nonwoven fiberglass mat with the instantly claimed protein weight percentages.

13. Applicant argues that Belmares and Chan et al. are not from the same field of endeavor. As pointed out in the rejections supra, both articles teach the creation of fiberglass mats using a wet-laying process.

14. Applicant argues that Chan says nothing about protein addition and has no teaching that would in any way suggest the addition of protein to a nonwoven, wet-laid mat binder. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

15. Applicant argues that it is difficult to understand why a skilled worker would seek to either replace the optionally fortified amine oxide additive used in Chan's binder with the protein of Belmares et al. or simply add it to Chan's binder. The motivation to provide Chan's binder with the protein of Belmares et al. is not set forth by Chan, but rather Belmares et al. Improper hindsight has not been relied upon for the combination of references.

16. Applicant argues that testing results presented in the subject application support the patentability of the pending claims. Examiner has taken the entire Specification into consideration, however Applicant has failed to show how the instant invention is novel over the

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applied art. Applicant argues that a skilled worker would recognize that the addition of a small amount of soy protein to a binder comprising conventional UF resins results in unexpectedly superior mat strength properties versus a binder based on a conventional UF resin alone. The strength properties due to the addition of the protein may not have been addressed in the prior art, however the addition of soy protein to a binder comprising conventional UF resins is known in the prior art.

17. Applicant argues that Trocino's binder is far removed from the upper limit of 10% for protein usage in the wet-laid fiber mat and as such does not remedy the deficiencies of Belmares. As addressed supra, Belmares et al. anticipate instant claims 7-9, 11 and 12. The Trocino reference has been relied upon as a secondary reference to reject claim 10.

18. Applicant argues that the rejection in view of Trocino fails due to the fact that Belmares relies on the protein for a formaldehyde scavenger, but Trocino utilizes the protein for its adhesive properties. Examiner has only relied upon the Trocino reference to teach a particular type of soy protein. Both references teach the use of soy and UF resins as binders and as such are from the same field of endeavor.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

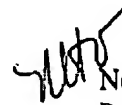
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew D. Matzek whose telephone number is (571) 272-2423. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mdm

MDM



Norca L. Torres-Velazquez
Primary Examiner
Art Unit 1771

October 10, 2006